Vol. 1 No. 1
December 1992

ATARI CLASSICS

The Magazine for the Dedicated 8-Bit User

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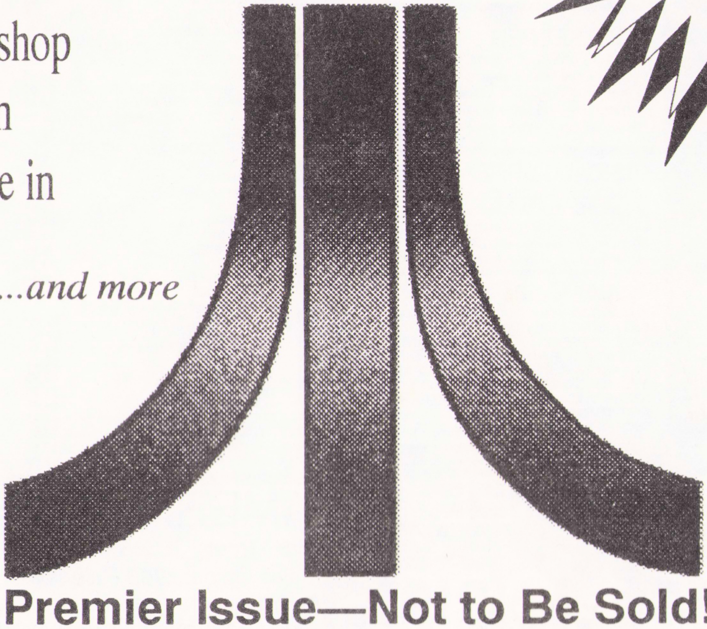
Exploring the Wild Fontier with Daisy Dot III
D9: Fix for AtariWriter+
Moonlight Workshop
The Fitting Room
Dollars and Sense in Education
...and more

Our First Issue!



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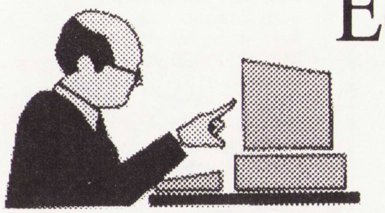
Editor's Desk



Ben Poehland, Managing Editor

I love this time of year. It's late September here in Pennsylvania, and the first cool breezes that blow away the "dog days" of summer bring with them a hint of excitement, a promise of something to look forward to. School classes are starting up again, and even though I'm long out of school there still remains a biological vestige of that sense of anticipation I felt at the beginning of each Fall Semester. All the most memorable and exciting things seemed to happen to me at this time of year.

Now it's Autumn 1992, and the old excitement is gripping me again. It's called Atari Classics. And judging by the interest 8-bitters are expressing in this novel enterprise, AC promises to be the success story Atari Corporation would rather not hear about.

We 8-bitters are now a disenfranchised community, having been disowned by Atari Corporation with their announcement of discontinued support for all 8-bit products at the beginning of this year. The withdrawal of ICD from our market at the same time was another heavy blow. The demise of ANTIC in 1991 robbed us of a central focus for our market and a common forum for expression of opinions and exchange of information. Our market was disintegrating, and no one seemed to know what to do about it.

As early as August 1991, in private conversations with Steve Hoffee (now our Disk Editor), I had broached the subject of a user-based 8-bit magazine to replace ANTIC; Steve was all for it. But alas, I can't claim official credit for the phenomenon that came to be called "The Atari Classics Movement". That honor must go to our "Moonlight Workshop" columnist, Jeff McWilliams.

In the best traditions of a free society, discussions about the future of our community were raging on Internet's Info-Atari8 Digest in the late autumn of 1991. Amidst the furor, this Jeff fellow appeared and blurted into the Digest ideas about an 8-bit magazine that seemed to have been extracted directly from my own brain. He further proposed the now-infamous Mail Campaign.

I immediately jumped in with an offer of logistical support, refining the idea with the use of pre-printed return postcards. Thereby was born the user-based movement that lead to the magazine you now hold in your hands. And for me personally, it was also the beginning of a unique friendship with Jeff, whose thoughts are so eerily close to my own that at times we almost seem to communicate telepathically. (If we ever figure out how to control this telepathy stuff, the phone companies are in trouble big time.)

The goal of the Campaign was to collect 500 written pledges for an all 8-bit magazine. Through the Winter and Spring of 1992 the Campaign rolled on. It was a *much* bigger job than any of us anticipated.

We formed a Committee, which by the time the Campaign ended in May had increased to six people scattered around the world. (The Committee's first international representative was Mike Jewison, now our "Fitting Room" columnist.) And we were successful. Including all the stragglers, the Campaign received 615 positive responses.

It devolved upon me in late May to lay plans for the magazine. I thought I would knock it out in 3 or 4 days. It took four weeks. Plans in hand, I figured we could land a publisher in a week. It took a month. Atari Classics was officially born on August 5, 1992. The same day I returned home from the hospital following some nasty sinus surgery.

Copy deadline for our Premier Issue was set for September 19. That gave me six weeks to assemble a Staff, make a zillion arrangements, and collect all the copy to fill the pages of this magazine. Chaos, pandemonium, utter madness. Mornings when I went to work so tired I forgot to shave (I work a full-time job as a research chemist).

But it's working. We are on track. The aspirations, hopes, dreams, and wishes of a great many people who expended their sweat and treasure over the past year are about to be realized. I'm barely able to contain my excitement as I compose this editorial on my trusty 800XL.

As I said, somehow these things always seem to happen in the Fall, about the time those first cool breezes put a nip in the air that quickens your step. I wish I could bottle this stuff and sell it; my fortune would be assured!

Now It's Your Turn.

If the concept of Atari Classics is not to be stillborn with our first issue, we'll need 500 paid subscribers before the end of 1992. Our Premier Issue is being distributed for free, but it will really only be free to those who don't subscribe. For you who believe as we do—that *"Atari 8-bits never say die"* this magazine will become Issue #1 of your paid subscription.

You'll find the Subscription Form on the last page: send it in *now. Energize your 8-bit!*

Plug into AC! Atari Classics, that is.

Tips ‘n’ Tricks

1027 INK ROLLERS: Good news for anyone still using the Atari 1027 letter-quality printer. Our Managing Editor recently obtained a replacement 1027 ink roller from B&C ComputerVisions and is pleased to report their latest stock of this item appears to be fine.

During the period 1989 to 1991 many vendors—including Atari Corp. itself—had acquired defective lots of these rollers. The defectives were easily identified by the fact that they quickly disintegrated, flinging bits of ink-laden material everywhere as the roller turned; it was also easy to scoop out a chunk of the spongy roller with a fingernail. The latest available stocks have a tough roller surface that doesn't come to pieces with use and will hold up to several rounds of re-inking. Better stock up!

XF-551 Mitsumi Mechs: from our Hardware Editor comes a hot tip for replacing the extremely rare Mitsumi drive mechanism in the XF-551 drive. New drive mechs are available from Syntax Computer, Inc., 18535 E. Gale Ave, Industry, CA 91748. 818-854-6363, sales. 818-854-6355, tech info. The mechanisms are brand new, $40/each plus shipping. They are identical to the original Atari mechanism with the exception that the *Ready* light is red instead lime-green.

Weirditudes of AtariWriter 80: AT-80 doesn't like filenames that begin with a number, like 8BITFILE.TXT. Any attempt to LOAD or SAVE such files will bomb out with a *Device Timeout* error. If you must have a file that begins with a numeric character, preface LOAD or SAVE commands with D1:, D2:, etc., and it will work OK.

The SpartaDOS RD.COM RAM-disk utility is doesn't work properly with AT-80 for files larger than 16K. Attempts to load files larger than 16K from a D8: RAMdisk will result in the text being distributed in scrambled fashion among the three AT-80 memory banks.

It is wise to add an extra line of blank spaces at the end of an AT-80 file. Failure to do so sometimes results in the last few characters not getting printed when the file is sent to a parallel printer.

If you scroll down a full screen of text one line at a time, when the cursor reaches the bottom of the screen there is a bug that suddenly sends you all the way to the end of your file instead of the top of the next screen: *very annoying!*

The first time this happens, simply pad the end of the file with a <CR>. Return to the top of the file using SELECT-T, and thereafter you'll be able to scroll downward without problem. You can remove the extra <CR> if you want; scrolling will still work.

We want bugs! Do you have a hot tip or news of a previously undocumented bug in a program? If so, we want to hear about it! Send your info to our Editorial Office. (Address in the masthead at the front of the magazine.)

Correspondents’ Corner: 8-Bits Around the World

Jerusalem Has Sunnyvale’s Number

Although AC received a variety of interesting reports from its various Correspondents around the world, limitations of space in the Premier Issue regrettably forced the Editor to sharply reduce this month's column. (The material provided by our Correspondents will be printed in future issues.) However, one report was so timely that we carved out a little space to make room for it.

From our Correspondent Itay Chamiel in Jerusalem, Israel came an excellent detailed translation of a local newspaper article originally published in Hebrew. It was from the Business Section of the Ma'ariv Daily dated August 8, 1992, an article entitled "Atari Lost the Game".

The article went to some length describing the decline of Atari Corporation and was especially critical of the company's penny-wise/pound-foolish style of management. It was the old familiar litany of Sunnyvale absurdities we 8-bitters have all grown accustomed to.

As our Managing Editor perused the translated text submitted by Itay, the content of the Ma'ariv article assumed even greater familiarity. After a little library work, it became apparent that in fact the Ma'ariv piece was basically a summary of the highly critical article that appeared in the August 3, 1992 issue of Forbes business magazine, an American publication. That article was titled, "Cheap Didn't Sell", by Dyan Machan.

Imagine poor Itay's chagrin when the Editor informed him he had spent all those hours of hard work translating an article that wasn't even original!

Still, the very fact that a relatively obscure foreign-language newspaper would have taken the trouble to read the Forbes article, translate it, and publish it in condensed form as a news feature is significant, especially in a country where Atari's sales must be vanishingly small. It may well be that the intention of the Israeli publisher was to present the piece not so much as a business brief, but rather more of a human interest story for businessmen.

On this side of the Atlantic, it's difficult to envision a place a like Jerusalem without making some sort of Biblical association. If there is one, perhaps it would be "How the Mighty Have Fallen".

Atari Classics would like to add more Correspondents to its rolls. We are presently seeking representatives in the Australia/New Zealand area, Canada, Great Britain, and northern Europe. The primary requirement is that you have access to the Internet. Contact Ben Poehland at poehland%phvax.dnet@smithkline.com for information.

Take advantage of CSS' first holiday sale!

Now $179.95! The Black Box save $20

The Black Box is an add-on board for the Atari 600XL (upgraded), 800XL, and 130XE computers. The Black Box provides many unique and useful functions.

The RS-232 port emulates the Atari 850 interface very closely, but goes beyond by providing 19,200 baud capability. The Black Box is the only interface to support **hardware flow control**. This enables owners of high speed modems (4800 baud and up) to use their modem at full speed, and not worry about data loss due to a slow BBS or terminal program.

The parallel printer port interfaces to most all Centronics-type printers. You may assign the printer number and line feed options from within the Black Box's configuration menu. The Black Box allows **buffering** of your data, either using the extra 64K in your 130XE or the optional 64K RAM in the Black Box itself.

The hard disk port was the real reason for the design of the Black Box. You may connect most any hard disk controller that is SASI or SCSI compatible, or drives with embedded SCSI controllers. It is totally compatible with the current versions of MYDOS and SpartaDOS. The Black Box allows you to have up to 96 partitions with names, and set any partition as any drive (D1: through D9:), allowing you to place unprotected single density boot programs on your hard disk. You may also write protect ALL of your hard disks with the flip of a switch.

The Black Box also provides support for users who have previously used an ICD MIO to store data on a hard disk. You can have compatibility with an MIO formatted hard disk by simply setting a dip switch.

The 6502 monitor is very handy for machine language programmers. How often have you wondered where your program was, or what caused an apparent "lockup"? Entering the monitor will show you all the processor registers, and display the disassembly of the instruction it was about to execute when you pressed the button.

A printer dump of your current screen may be done at any time by pressing one of the buttons on the Black Box. A switch allows you to choose either text or graphics dump. (The graphics dump is only available for dot matrix printers capable of graphics.)

CSS sells a variety of accessories for your Black Box. The **Black Box Case** is a durable black plastic housing for your Black Box which sells for $39.95. **Modem and printer cables** are available for $9.95 each.

The Black Box regularly sells for $199.95 plus $8 shipping and handling. The Black Box with a 64K printer spooler regularly sells for $249.95 plus $8 shipping and handling.

Now $134.95! The Floppy Board save $15

Our latest and greatest product! The Floppy Board is an add-on expansion board for the Black Box interface. It allows the user to add up to 4 inexpensive, "standard" floppy drive mechanisms. The Floppy Board supports almost all floppy drive configurations, including 360kB, 720kB, 1.2MB, and 1.44MB. Built-in the Floppy Board are the Black Box Enhancer and a version of our Super Archiver.

Disks formatted on the Floppy Board are accessed at parallel bus speeds, providing a **substantial** performance increase over the standard serial Atari floppy drive. In fact, Floppy Board drive access is much closer to hard drive speeds than to standard serial drives! Included with the Floppy Board is our **IBM/ST Disk Transfer Utility** program, which allows you to both read and write IBM or ST disks. This makes the Floppy Board the ideal method for porting files to and from your PC or ST!

Also available for your Floppy Board is our 1.44MB drive kit. The kit includes a high-quality 1.44MB drive mechanism, power supply, and floppy drive cable, and sells for only $79.95 plus $8 shipping and handling. The Floppy Board regularly sells for $149.95 plus $5 shipping and handling. CSS also sells power supplies, floppy drive mechs, and custom floppy drive cables. Call for pricing.

Now $79.95! The Super Archiver II save $20

The Super Archiver II edits and copies all enhanced density programs plus retains all the features of our Super Archiver. This allows you to copy or create single or enhanced density protection schemes (including "phantom" sectors). It is completely automatic and compatible with the Super Archiver, a truly powerful backup and programming device.

Only $99.95 plus $5 shipping/handling. If you already own a Super Archiver, you may upgrade to a Super Archiver II for only $29.95 plus $5 shipping/ handling (disk upgrade; no additional hardware required).

Now $39.95! The Black Box Enhancer save 20%

A must for all Black Box owners! The Black Box Enhancer is a plug-in module for your Black Box, enhancing the printer functions and adding an instantly available, full featured **sector editor**!

The built-in **screen dump to printer function** will now render a hardcopy with a 16 shade grey scale representation of the colors. A special graphics printer handler is built-in, which allows any output directed to P9: to be printed on your graphics compatible printer with the same character font used on your computer. This means all the Atari special control and graphics characters will be printed, along with inverse.

The built-in Task Master sector editor is the most powerful editor for the 8-bit. It contains a sector copier featuring multiple copies, automatic formatting, and uses all available memory for fast disk duplication. The Task Master is not limited to only floppy disks. It can handle up to 16 megabyte hard disk partitions (even in the sector copier mode)! The Task Master provides full DOS support for MYDOS, SpartaDOS, and Atari DOS derivatives. Subdirectories are fully supported! You may link through individual files by simply moving through the directory and highlighting the file you wish to edit. 16-bit and sector map linking are supported for hard disks, and 11-bit linking for floppies. It is ideal for quickly editing files and repairing damaged directories.

The Black Box Enhancer regularly sells for $49.95 plus $5 shipping and handling.

Now $59.95! The Super Archiver save 15%

The Super Archiver is not just another double density high speed upgrade. Rather, it is the most powerful copying and disk editing tool available! Copies of disks are exact duplicates of originals, eliminating the need for patches, PDB files, extra computer hardware, etc. The Super Archiver is the fastest non-buffered upgrade for the 1050 drive.

Once installed, your drive has the ability to perform in all three densities, reconfiguring automatically as needed. But unlike some upgrades, 100% compatibility is maintained, so you will be able to boot any disk regardless of the protection. The software provided enables sophisticated editing of single density disks. Ultra Speed data transfer is fully implemented, so programs and hardware modifications supporting this will really take off. The Black Box and the UltraSpeed Plus OS also support this.

The Super Archiver is fully compatible with the older Archiver for the 810 drive, but comes complete with more powerful software that makes use of the 1050's extended capabilities. You may use an Archiver 810 drive for two drive backups.

The Super Archiver software is more than just a backup program. It enables the user to actually edit each sector (with ML disassembly), modify the sector layout on each track, and create your own bad sectors and other forms of protection. The Super Archiver is the only modification that will reproduce "phantom" sectors. The software included will duplicate these automatically, as well as let you write your own. Extra memory is supported for single pass copies. Track skewing (aligning each track in a certain order) is supported, as well as automatic speed compensation required to write out long tracks.

Included on the disk are other useful utility and diagnostic programs. The Mapper allows tracing the loading of a program within the drive. The Super Archiver utilities are all designed with simplicity in mind, yet with enough power for whatever you need. The only programs we know that cannot be duplicated are the later Electronic Arts programs and Synapse Syn-series (34 FULL sectors/track). However, we do have a fix for this! (See the Bit–Writer.)

Disks should only be copied to back-up your original program disks! CSS in no way supports the misuse of this product as a pirating device. The Super Archiver regularly sells for $69.95 plus $5 shipping/handling.

Now $34.95! The XF551 Update NEW ITEM!

The XF551 Update is a completely new internal operating system for your XF551 drive that fixes the quirks and bugs inherent in the XF551 design. It runs more commercial software, changes density properly, supports true Ultra Speed data transfer (actually, faster than the 1050 Ultra Speed), and has an optimized interleave in high speed formats to produce the fastest possible operation. It is the upgrade every XF551 owner should have!

Installation requires only a few simple solder connections. The introductory price for this new product is only $34.95 plus $5 shipping/handling.

Call or write for our free 1993 catalog!

All CSS products on sale until December 31!

Now $149.95! The Multiplexer save 25%

This device brings the power and flexibility of larger systems to your 8-bit. The Multiplexer is a collection of cartridge interface boards that allow up to 8 Ataris to read and write to the same drives (typically a hard disk), access the same printer(s), and talk to each other. It is the first practial networking system for the Atari 8-bit computer.

One "master" computer (any 8-bit) is equipped with the master Multiplexer interface. Then up to 8 "slave" computers hook up to this master, each having their own slave interface. The slave interface consists of a cartridge that plugs into the cartridge port. It has its own socket on the top, so you can use whatever cartridges you desire with the system.

The "common" peripherals (things that are to be shared) are connected to the master. On each slave, all disk and printer I/O is routed through the master, so no extra disk drives are needed. The master computer can be configured in any manner you wish. You may have certain peripherals local to the slave, or routed to a different number on the master. Note that serial ports (R: RS232 interfaces) are not multiplexed.

Under development is a BBS system that will make full use of this device, allowing up to 8 lines/users to be using the system at the same time (our BBS uses it right now)! A multi-user chat mode is a feature of this BBS; however, you do not need this program to run a BBS with the Multiplexer (but be warned that not all BBS programs will run concurrently). All slaves are independent, and do not need to have the same program running on them.

This system is excellent for BBS SysOps; you can be using your hard disk(s) while still running your BBS uninterrupted! Another example is in a classroom situation, or anywhere a disk needs to be shared by many people. This is an excellent programming / debugging tool as well!

The Multiplexer regularly sells for $199.95 for a master and two slave units with cable. Additional slave units, regularly $89.95 each, are on sale for $67.95. Shipping/handling is $5.

Now $74.95! The XF Single Drive Upgrade save $25

The XF551 Single Drive Upgrade for your XF551 disk drive will double your storage space to 720KB by replacing your 5.25" 360KB floppy with a new 3.5" floppy disk drive. Not to be confused with public domain upgrades, our custom chip and brain module provide true Ultra Speed compatibility (extremely fast operation with compatible sector copiers and DOSes), and eliminates incompatibilities with software. The upgrade is designed so that it will work with a 5.25" drive, should you ever need to switch back.

Included in our kit is a high quality 3.5 inch floppy drive mounted in a 5.25 inch frame, so as to provide a perfect fit inside your XF551. Also included is a program which allows you to read IBM and Atari ST disks on your converted drive! Built–in text translation is featured for easy porting of PC/ST text files into 8–bit word processors.

The XF551 Single Drive Upgrade regularly sells for $99.95 plus $8 shipping/handling. If you already have a 3.5 inch drive to use, you may order the kit minus the 3.5 inch drive for $59.95 plus $5 shipping/ handling.

Now $119.95! The XF Dual Drive Upgrade save $20

Our XF Dual Drive Upgrade has all the features of our XF Single Drive Upgrade, but allows you to have both your 5.25 inch 360KB floppy and a 3.5 inch 720KB floppy drive on your system. This is a totally switchless upgrade that turns one XF551 into two disk drives. Each drive acts separately, the 3.5 inch drive assuming the next drive number higher than the 5.25 inch setting. You can copy between drives, even mixing densities!

Complete with a 3.5 inch drive, the XF Dual Drive Upgrade regularly sells for $139.95 plus $8 shipping/handling. If you already have a 3.5 inch drive, you may purchase the kit minus the 3.5 inch drive for $89.95 plus $5 shipping/handling.

8-bit Repairs

Having a problem with your 8-bit equipment? CSS repairs all kinds of Atari products, from computers to disk drives. Call us to arrange shipment of your items.

If you have two of the same product and both need repair, take advantage of our **two for one** repair deal. Send both items to us, and we will fix one of them **FREE** and keep the other one for parts. Again, call us to arrange shipment.

Now $64.95! The Bit–Writer save 20%

The Bit–Writer is capable of duplicating even the "uncopyable" Electronic Arts and Synapse Syn–series, which employ 34 full sectors/track. These cannot be duplicated with the Super Archiver, as a standard floppy disk controller chip is simply not capable of writing what is necessary. The Bit–Writer is capable of reproducing these and future protection schemes of non-physically damaged disks, because it breaks down the data into bits, and writes it all out at once.

The Super Archiver with the Bit–Writer is the ultimate backup tool for the 1050 disk drive. Exact duplicates of originals are made. The Bit–Writer must be used with the Super Archiver. Regular price is $79.95 plus $5 shipping/handling.

Now $59.95! The UltraSpeed Plus OS save $10

The Operating System that should be in every XL/XE computer! The Ultra Speed Plus OS puts unbelievable speed and convenience at your fingertips. After using it a while, you'll be spoiled! Charles Cherry in the April '89 ANTIC magazine reviewed, "Quite simply, if you don't have Ultra Speed Plus, you're using a crippled Atari."

Use any DOS to place Ultra Speed formats on your disks (with XF551 or modified 1050 drives), reading and writing at this speed with most programs. This high speed mode is toggleable for maximum compatibility.

Built in RAMdisk handlers recognize any size (up to 2MB) XE–type memory upgrade. This RAM drive may be treated like a regular disk drive, capable of single or double density operation. Since the handlers are in ROM, most all programs (including sector copiers) see it. This opens up a whole new realm, as you can sector copy a disk into RAM, edit it, and even boot from it! A mini sector copier is built in for easy use.

A configuration menu is built in, and may be used to remap disk drives to respond to different drive numbers, and change the drive number of the RAMdisk. The memory test routines have been rewritten, and test ALL of the available memory. If a problem is found, the offending bit is displayed. The diagnostic ROM bit on the PIA is not needed, so all bits are available for memory upgrade use.

Several key functions have been added: a cold start key (to allow rebooting from any lockup without losing the contents of your RAMdisk), disk I/O sound toggle, screen DMA disable (turn off the screen to increase processing time of slow programs), internal BASIC toggle, keyboard lock, and screen color toggle. The OPTION key is reversed when booting, so you don't need to hold it to run ML programs.

The Ultra Speed Plus OS module actually contains three operating systems: the Ultra Speed Plus OS, the standard XL/XE OS, and the XL Fix Plus OS. The XL Fix Plus is a 400/800 OS translator in ROM, so you won't have to boot a translator disk again! It has two modes of operation for maximum compatibility.

Four simple solder connections are required for installation if your machine has a socketed OS ROM. If it does not have sockets, installation should be done by someone proficient in desoldering. As always, we provide free installation if you send us your computer. Regular price is $69.95 plus $5 shipping/handling.

Ordering Information

Call CSS at (716) 429-5639 between 10am and 5pm Eastern Time to order, or send your order to the address below. CSS accepts payments in cash, money order, Visa, MasterCard, or COD. Personal checks are also accepted, but shipment of your product is delayed until the check has cleared. Canadian orders must be paid for in US funds. Prices in this ad effective until December 31, 1992 only.

Call or write for our free catalog of products. CSS also has a free catalog of pre-owned software, Atari related books, and owner's manuals for most hardware products.

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The Fitting Room

Adventures with RAMdisks and TransKey

Mike Jewison, AC Staff Columnist

Introduction

Welcome to a new column in Atari Classics. Hmmm... actually, I guess they're all new columns, aren't they? You might be wondering "what's this Fitting Room thing, anyway?" My Fitting Room is much like those you'd find, for example, in a clothing store. There, you wander the aisles, perusing shelves, to see what's available. If you see something you like, you take it into the fitting room and try it out for size. If it does what you want, great; if not, you keep on looking. What we'll be doing in this and future installments of The Fitting Room is taking a look at things we can use to dress up our computers. These could include hardware or firmware upgrades, both commercial and homebrewed, as well as software packages.

I don't consider myself an expert in either hardware or software design; anyone who's seen my programming style can attest to that! What I do love to do, however, is tinker. I like to take things apart and put them back together. I like to build little projects I find in magazines. I like to upgrade hardware. Although I couldn't design an electronic dodad from scratch, give me a schematic and a parts list and I'm off to the races. I'm what I like to call a Weekend Hacker. I suspect that many of you are much the same, and it's you to whom this column is dedicated.

In the Beginning...

I bought my first computer, a 16K Atari 400, in 1981. At that time I couldn't even afford a 410 cassette recorder (I was a poor starving graduate student; I had to wait one more paycheck for the 410). The day the warranty on the 400 expired, I opened it up. (As you'll discover over time, I'm cautiously paranoid. I wasn't about to void my warranty by opening the computer while it was still in effect!) I wanted to know what it looked like on the inside. Over time I made some modifications to the little beastie; a proper composite video output jack (from Antic Vol. 3 No. 1), an external keyboard (from Analog #9), a 48K memory upgrade, others I've undoubtedly forgotten. The day my 400 died (from an overdose of tinkering, no doubt), I moved up to a 48K 800 and a Percom DS/DD disk drive.

The purchase of the Percom opened up many new vistas for me, including the world of Infocom. I became addicted to Interactive Fiction. I never solved any of the games (I have 8 or 9), but the joy was in the playing, not in the solving. I began to worry, though, about how much of a toll all this Infocoming was taking on my disk drive. I figured that the drive motor turning itself off and on several hundred times during the course of playing a game would exponentially decrease the lifetime of the drive. Percom had ceased production of its Atari drives to concentrate on the more lucrative IBM market. The thought my drive wearing out and me being forced to buy a new one sent shivers up and down my spine (not to mention my bank book).

All the while I continued to tinker. Over the years my 800 has been through several metamorphoses, including upgrades to both its operating system and memory. The machine's current configuration consists of a Newell Industries' RAMROD OS (which also holds both the 8K OMNIMON and 4K OMNIVIEW chips) and a Crystal Computer Products' 256K Axlon-compatible memory board. In fact, my 800 has evolved about as much as it's going to; I daresay there are very few new hardware upgrades left in the marketplace for the venerable 800.

Sometime during 1986, as I was worrying about my Percom (tinkering with a computer was one thing, but a disk drive was something else), I came across a message on CompuServe from Charles F. Johnson, now of Codehead Software fame, asking Antic Publishing if they'd be interested in some software he'd written (they said no) to allow you to play an Infocom game from your RAMdisk using the Newell OMNIMON chip and any Axlon-compatible RAM card. Well, Antic may not have been interested (they claimed the software required too much specialized hardware and firmware) but I certainly was! He had just perfectly described the internal workings of my computer. Well, this was something I most assuredly just had to try out. Needless to say, I immediately sent a reply to Charles and within a week or so I'd received a disk in the mail.

Getting the games to run from the RAMdisk was a multiple step process. You had to first modify the Infocom shell program (side one of the disk) with the necessary hooks to tell it to look to the RAMdisk for its data files, have the OMNIMON install and format the RAMdisk, copy the flip side of the Infocom disk (the game data) onto the RAMdisk, and finally load in the (modified) shell program from side one of the disk. Unknown to me, however, was the fact that Infocom regularly changed the format of their shell routines so that many of my versions of the games were incompatible with Charles' software; the only games I was able to successfully modify to run from the RAMdisk were Enchanter and Planetfall. Now I love to tinker, but I'm not much of an assembly language programmer. I didn't have the expertise to go in and disassemble the shell program for each of the remainder of my Infocom games and implement the necessary patches by hand. As a result, I ended up playing a lot of Enchanter from the RAMdisk (but never solving it) secure in the knowledge that I was extending the useful lifetime of my Percom drive. Not to mention the fact that Infocom games become much more pleasurable at ramdisk speeds.

Changing Times

I was very comfortable with my setup and had no desire to upgrade. But various reviews and ads for nifty new gadgets and hardware upgrades that would work with only the XL/XE computers (like the MIO and Black Box) got me thinking that I should re-evaluate my "status quo" stance. Then, one day, I ran across a BBS message that crystallized my desire to upgrade.

The message was one which originated on GEnie from Michael St. Pierre. For those of you who don't know who Michael is, he developed the TransKey, a hardware upgrade that allows you to connect an IBM-PC style keyboard to your 8-bit Atari (ANY 8-bit Atari). The message gave general instructions on how to mount an 8-bit Atari inside a PC case. Using the TransKey, you'd have a configuration which looked like a PC on the outside (case and keyboard), but which was actually an 8-bit Atari on the inside. Well, this was such an intriguing idea that I just had to try it out.

As there was no way I could rip apart my dear old 800 (I thought of it as giving the computer a face lift, something I would never do to myself), I decided I needed a new CPU. I bought a used 130XE from someone on the Internet but couldn't bring myself to gutting the machine and simply discarding the case; it looked so nice sitting there on my desk. After hearing from many of the diehard hackers that an XL would best suit my purposes, I ended up getting the motherboard from an old 800XL-no case, no keyboard, no power supply. After all, I didn't need those things anyway. The fellow from whom I purchased the board thought I was crazy-but that's another story.

I ordered my TransKey board from DataQue Software, who had purchased the rights to TransKey from Michael, and waited an interminable length of time for it to arrive. I never could figure out why Canada Post picks the most inopportune times to go on strike. Anyway, while I waited for the strike to settle I managed to scrounge an old, unused PC case and keyboard from work. I mounted the motherboard in the case and waited. When the TransKey finally arrived, I plugged everything in, wired up the necessary jumpers, and-lo and behold! It worked like a charm.

The TransKey consists of a PC board measuring about 3.5 x 2.5 inches connected, via a short ribbon cable, to a piggyback board which plugs into the POKEY socket (woe to those of you with unsocketed chips!) on your motherboard. You then plug the POKEY back into the piggyback board. The jack to which you plug in the IBM-style keyboard is connected to the main TransKey board, which also contains its own microprocessor as well as a number of other chips. Once you've installed the TransKey you can use either the IBM keyboard or the stock Atari keyboard (which does me no good as I don't have one for my XL).

The use of an IBM keyboard gives you access to a number of new features, including improved cursor movement, use of the numeric keypad, and a macro function (a macro is a preprogrammed series of commands implemented as a single command) which allows you to send any key sequence with a single keypress. In fact, this might be the most powerful feature of the TransKey. There are four macro tables burned into the EPROM on the TransKey board, including macros for some of the more common Basic, MAC/65, and SpartaDOS commands. The on-board 4K SRAM chip allows you to program and store four more macro tables in RAM.

Just as with your computer, however, any macros you enter into the RAM tables will be lost when you power down the computer. For an additional $10.00, you can replace the 4K SRAM chip with a battery-backed SRAM, which will preserve your RAM macro tables when your computer is turned off (I opted for this with mine). You can also rewrite those macros burned into the EPROM if you have access to an EPROM burner.

The TransKey is available in a variety of flavors, depending on whether your POKEY is socketed or soldered, whether you want an in-line or chassis mount keyboard connector, and whether you decide to go for the battery-backed RAM or not. I haven't yet had much of an opportunity to fully explore all that TransKey has to offer, but I like what I see so far.

Full Circle

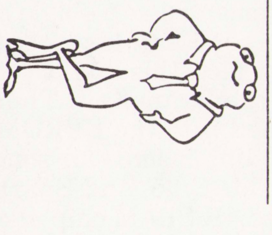
Anyway, with my TransKey successfully installed, my insatiable desire to tinker led me back to the magazine ads. I noticed in a recent issue of AIM that one of the last bastions of 8-bit hardware support, Computer Software Services, was offering a sale price on their Ultra Speed+ OS upgrade for the XL/XE computers.

One thing which caught my eye was that US+ included its own RAMdisk handlers and that you could, if you chose, install your RAMdisk as drive 1. This got me to thinking the combination of US+ and a memory upgrade to my XL would allow me to run Infocom games from a RAMdisk. The glory of this is that I would not have to modify the Infocom games themselves; any Infocom game should work with such a setup. I immediately placed my order with CSS for the UltraSpeed+ OS.

Next time: The US+ arrives, and I look for a suitable memory upgrade!

Products mentioned:
TransKey, from DataQue Software
P.O. Box 134
Ontario, OH 44862
USA
GEnie: DATAQUE.1
419-529-2478
Basic Price: $49.95 (soldered Pokey)
$59.95 (socketed Pokey)
ZRAM option: $10.00 additional

TOAD COMPUTERS



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Got an idea for a product? Send it in! If we think it looks good, we'll add it to this list!

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ATARI INTERFACE
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Moonlight Workshop

Printing Graphics from the XEP-80

Jeff McWilliams, AC Staff Columnist

Workshop Welcome

The title of this column aptly describes my computing environment. As a full time engineering student and Dad, most of my Atari tinkering occurs in the dark hours of the night, or on weekends. "Moonlight Workshop" will be a sort of tinkerer's workbench for Atari Classics. What you'll mostly find here are little programs, utilities, and hardware projects for your computer. The column will be centered around solving little problems to make 8-bit computing easier.

A variety of languages will be used, including BASIC, Action!, maybe C, and every now and them some assembly language. The sophistication level will vary from beginner to slightly advanced, but I'll make an effort to present "Moonlight Workshop" so that everyone will get something out of each installment, no matter what their level of computer knowledge.

Additionally, "Moonlight Workshop" will serve as your Question and Answer resource. If you have a problem with your 8 bit, send it in by U.S. mail or electronic mail. I'll use my knowledge, that of my fellow Atari Classics staff cohorts, and others in the Atari community to try to solve your problem as much as possible. A challenging problem could provide the basis for the entire topic of discussion covered in that installment of "Moonlight Workshop"—of which this month's installment is a perfect example!

FreeNet Post

There's this fancy BBS thing called the Cleveland Atari Freenet. [Internet users can access the Freenet by Telnetting to freenet-in-a.cwru.edu. The IP address is 129.22.8.38. Non Internet users can dial into the Freenet with their modems at (216)-368-3888. Get to the Atari SIG by typing "go atari" at any menu.] The sysop of the Freenet is a colorful fellow named Michael Current. One day Michael posted the following message in the Atari 8-bit SIG of the Freenet:

"This spring for my Computational Physics class special project I did some programming and graphing on my 130XE. Since a poster presentation was required, I needed hardcopies of the graphs I produced. Simple, right? Not in this case. My Epson LX-810 is about as standard a 9-pin dot-matrix parallel printer as you can get, but my lone printer interface is the XEP-80 Interface Module.

"This alone is annoying because I can't print anything unless I have that XEP80HAN.COM file loaded. Most of my printing I do from AtariWriter-80, so I already have the handler loaded. But now I had to load the handler, then use a special BASIC XIO command to return to the ANTIC display so I could print through the interface at the same time as I had a GRAPHICS 8 screen displayed.

A plea to "comp.sys.atari.8bit" on Usenet resulted in a couple different codings in BASIC for dumping a GRAPHICS 8 screen to the printer. But they each froze the computer before the printing began! After many frustrating re-boots of the system I learned that once the XEP-80 handler is loaded, the act of entering any graphics mode of 6 or higher will cause a system lock-up. Problem identified.

"I had two choices. One was to get a normal printer interface like the ICD P:R:Connection, so I could print any time I want to. I may get around to doing that someday. But with the presentation date fast approaching, I found a good work-around. Instead of dumping right to the printer, I adjusted my BASIC code to PRINT to a data file instead. So I could run my program, save the graph to a file, go to DOS, load the XEP-80 handler, then COPY the data file from disk to printer. A convoluted but effective graphics screen dump. Project saved. Michael Current."

XEP-80: WHAT Parallel Port?

There are probably quite a few people who bought an XEP-80 not only for the nice 80-column video display, but also for its standard parallel printer port. Having access to parallel printers opens up a whole new world of productivity for us Atari 8 bit users. Imagine receiving an order from the UPS man, and opening the box to find the XEP-80 you ordered. You tear into the box, quickly scan the documentation, and connect the XEP-80 to your existing 8 bit system. You boot PrintShop and try to print. Nothing happens. Okay, try another printer driver. No luck yet. You check all the cables: everything looks OK. You boot your favorite 80 column word processor and try again. Nothing happens. Eventually, you find the sun peeking over the horizon. And you're still sitting there: annoyed, frustrated, and furious.

Nothing in the ads said the XEP-80 has serious limitations on use of the printer port. If you read carefully through the manual, you'll eventually discover Atari's caveats on using this potentially useful hardware feature. For the computer to recognize the existence of the port, you need to install a "printer handler": a special little executable program that loads into memory. It tells the computer it can access a parallel printer, but that there is a special method that the computer needs to use in order to send data to that device. Unlike the 850 Interface, P:R:Connection, MIO or Black Box, you can't operate the printer connected to the XEP-80 without this handler installed.

Those other hardware interfaces work either by presenting a connection to the printer over the SIO bus (where the computer normally looks for printers), or they automatically load their own printer handler when the computer is turned on. The former applies to the 850 and P:R:Connection, while the latter applies to the MIO and Black Box devices. What makes the XEP-80 different is that it talks to the computer through the joystick port. Although this hardware path is a little odd, the XEP-80 isn't the only device in the joystick-port category.

There was another printer device called the ICEPIC available long ago that worked the same way. Analog Computing also published a do-it-yourself printer interface that connected to the joystick port. Why did Atari "cripple" the XEP-80? Compatibility reasons, among other things. The powers that be at Atari decided the XEP-80 should be able to plug into ANY Atari 8 bit (you 400/800 and 1200XL users will appreciate this). The compromise was to connect it via the joystick port.

The printer handler is part of the XEP80-HAN.COM file that Michael Current mentioned. On the XEP-80 utility software disk, it's called AUTORUN.SYS. In order to install the printer handler, you need to be able to load it from DOS. With programs like PrintShop—which is already a boot disk—that's impossible. There's currently no way to get a program like PrintShop to print through the XEP-80 because you can't load the handler into memory prior to running the PrintShop program. As Michael related above, even with the handler loaded, printing graphics files can be tricky. If you don't have a working knowledge of your 8-bit and how to do some well-considered programming, you're really stuck. Michael was at least able to program his way around a nasty pitfall that arises from working with the XEP-80.

A Graphics/Printer Handler

I can't make PrintShop print through an XEP-80, but I can show you how your XEP-80 can print those Graphics 8 and 7+ images AND display them on your XEP-80 screen as well. Keep in mind the XEP-80 has its own video output jack that connects to your computer monitor. This means the computer now sends two displays, one from the regular 40-column display jack on the back or side of your computer, and the second (80-column output) from the XEP-80. Unless you have two monitors, you can't see both displays at the same time. Who wants to print an image you can't view first anyway? Sure would be nice to see it first, make sure it got labelled with the proper filename, etc.

If the program were to display the image on the 40-column output, you would have to switch from your XEP-80 display to the 40-column display in order to view it. If you have Ben Poehland's infamous "80-Column Switcher" ("The 8-Bit Alchemist", Current Notes, April 1991, pp. 12-14) this isn't really a problem, but it can be distracting. Best to just throw the image up on the XEP-80's display.

So, how do you do it? It turns out to be pretty straightforward—but only after I went digging into my Antic Magazine archives. In the October 1988 issue, Matthew Ratcliff shows some sample programs that throw graphics images up on the XEP-80 display. I studied his BASIC program listing and noticed all these mysterious machine language calls imbedded in the program. Matt briefly mentioned what the routines did, but he didn't explain HOW. The method he used to send graphics to the XEP-80 were hidden from the casual programmer by all those machine language routines.

On a hunch, I jumped into BASIC XL and started fooling around with my own BASIC program, following hints in Matt's code. I was amazed when I found out just how easy it is to send graphics to the XEP-80.

A graphic image is held in the memory area of the XEP-80 exactly like a GRAPHICS 8 image is held in the computer's memory. The data consists of bytes placed end-to-end left to right, and from top to bottom, to describe a 320x200 display. This means a GRAPHICS 8 picture file can be loaded from disk and sent directly to the XEP-80 without any manipulation or processing. The hard part is telling the XEP-80 to go into GRAPHICS mode and sending it data. The following steps are required: 1) Load the graphics image into memory, usually into a STRING which is 7680 bytes long. 2) Open an I/O Channel for writing to the "E:" device. (Remember that "E:" stands for screen "E"ditor. This means we're going to talk to the XEP-80, since it's displaying our screen.) 3) Do a GRAPHICS 24 call. (Graphics 24 is a special command for the XEP-80. It tells the XEP-80 to go into graphics mode and prepare for high speed data transfer.) 4) Send the data in the string. We could use something like the following:

```
10 REM GRAPHICS FILE HAS BEEN LOADED INTO PIC$
20 OPEN #1,8,0,"E:"
30 GRAPHICS 24
40 FOR A=1 TO 7680
50 PUT #1;ASC(PIC$(A,A))
60 NEXT A
70 CLOSE #1
```

That would work just fine, but it would be really slow. Who wants time to eat their lunch whey they wait for the XEP-80 to display a graphics image? It's quite easy to make the program run much faster by implementing a routine which sends all the data to the XEP-80 in one big chunk. For this I used a machine language routine much like Matt's. This routine does two jobs: it reads graphics data from disk, then sends it to the XEP-80. It and the following graphics dump routine are taken from a book called "BASIC Turbocharger" by Jeff Bader. Sold by Alpha Systems, this book and the accompanying disk offer a wealth of little utilities that make programming much easier. (Hey, I'm not about to reinvent the wheel. If there's some routines already available, and they do the job, I'm gonna use 'em!)

How It Works

The program in Listing 1 should work with any BASIC for the Atari. Look at line #1120: it shows how to call the I/O routine via BASIC's "USR" call. The code has been stored into RW$ at the beginning of the program. After the address of this routine, the next parameter in the USR call is the channel number through which data will be sent. The next parameter tells the routine whether to read, or write, data. RVAL is used for read, and WVAL is used for write. Following this is the address in memory where the data is to be written to or read from. Since we want the data in a string called PIC$, we used "ADR(PIC$)" for this parameter. The last number the routine needs is the length of the file transferred. Both GRAPHICS 8 and GRAPHICS 7+ image files take up 7680 bytes in uncompressed form, so that's the value supplied to the routine.

Lines 1150 through 1170 send the image data—now stored in PIC$—to the XEP-80. Notice these lines follow steps 2 through 4 above. We use almost the same parameters in the USR call as we did for reading the data, except that WVAL us being used in line 1170 instead of RVAL in line 1120.

Lines 1320 through 1360 print the image to the printer by calling the second machine language routine stored in PR$. Before printing the image, I switched the XEP-80 back into character mode. An interesting thing happened when I tried keeping the graphics image on the screen and called the print routine. The lower 1/3 of the display became filled with jarbled dots that shifted as data was sent to the printer through the XEP-80. What this told me was that the XEP-80 has a limited amount of memory, just enough to hold a GRAPHICS 8 image. When you send the XEP-80 data to be passed to the printer, it has to temporarily store it somewhere, so it overwrites part of the screen display to do so. In the USR call that prints the image, BUFFER$ is a temporary storage area that the machine language routine uses for its own purposes. If you replace "CNORM" with "CINV" in the USR call, the picture will be printed white on black instead of black on white.

You'll hear a bell ring after the image is displayed to the screen. Press any key to have the program print the image. If you don't want to print that file, answer no when it asks, and the program will rerun. The program ends when a graphics picture has been successfully sent to the printer. Neat, huh?

Try Some Variations...

If you want to use BASIC XL, BASIC XE, or TurboBASIC XL, you can modify the program as follows: First delete line 1030, and lines 1450 through 1490. Then replace line 1120 with:

```
1110 BGET #1,ADR(PIC$),7680
```

and replace line 1170 with:

```
1160 BPUT #1,ADR(PIC$),7680
```

Note that the first machine language routine does nothing but add these two commands to standard Atari BASIC.

If you own a 24 pin printer, you can indicate so just before the program prints. This doesn't increase the resolution, it just fixes a vertical spacing problem that occurs with some 24 pin printers.

If you want to write a slideshow sort of program, send multiple images to the XEP-80 as follows: 1) Get the first image; 2) Open channel to "E:"; 3) GRAPHICS 24; 4) Send the image to the XEP-80; 5) Send the contents of EX$ to the XEP-80; 6) Get next image; 7) GOTO step #4.

Look at lines 1010 and 1050: line 1010 sets the length of EX$ to 512 bytes, and 1050 fills it with zeros. Even in graphics mode the XEP-80 has a cursor. When you first enter this mode it's at the top left of the screen waiting for data. After the image is received, the cursor lies at the bottom of the screen. You could close "E:, reopen it, and do another GRAPHICS 24 to reinitialize the XEP-80, but you don't really have to.

In order to get the XEP-80's cursor back at the top of the screen, a 7680 byte image needs to be followed by 512 bytes. There are 200 lines on the XEP80's graphic display. Of those, your standard GRAPHICS 8 picture only uses 192 of them. So this program could be modified to send the picture data, then 320 bytes of data that would make "PRESS ANY KEY" appear just below the picture. (A line is 320 dots wide, divided by 8 dots per byte = 40 bytes per line; 8 lines X 40 bytes/line = 320 bytes.) Then send 192 extra ZERO bytes to the XEP-80, and the cursor would wrap to the top of the screen, ready for the next block of image data. I noticed that while using this method, the cursor that scans across the screen as the XEP-80 draws the graphics image disappears when the second image in succession is being drawn. For each additional image, no cursor appears. Interesting!

If you're using SpartaDOS-X, the handler built into the cartridge called "XEP80.SYS" doesn't work with this program. What you want to do is copy the "AUTORUN.SYS" file from the XEP-80 disk to your

SpartaDOS-X main disk, renaming it XEP80.COM. Then type the following at the command line prompt:

CAR:XEP80.SYS XEP80

Now go to BASIC and run LISTING 1. This method is a little unstable, it may not work for all XEP-80 type programs. If it fails, fall back to either a disk-based SpartaDOS, AtariDOS, or an AtariDOS lookalike, and just use the AUTORUN.SYS file from the XEP-80 disk.

Hopefully this month's topic helped all you fellow XEP-80 users out there. The printing routine isn't the greatest to be sure, but the supplied program can serve as an excellent foundation upon which a more sophisticated XEP-80 print utility can be built.

If you have questions or problems with your 8-bit, or you have a comment or suggestion, feel free to write or send me e-mail. I can't guarantee I'll answer every letter, but I'll do my best. With a little luck, I'll see you all here again with another installment of "Moonlight Workshop"!

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Listing 1

```
1000 PRINT CHR$(125);"INITIALIZING..."
1010 DIM RW$(33),PR$(163),BUFFER$(198),PIC$(7680),
     EX$(512),FN$(25)
1020 DIM L$(5)
1030 FOR A=1 TO 33:READ B:RW$(A,A)=CHR$(B):NEXT A
1040 FOR A=1 TO 163:READ B:PR$(A,A)=CHR$(B):NEXT A
1050 EX$=CHR$(0):EX$(512)=CHR$(0):EX$(2)=EX$
1060 RVAL=4:WVAL=8:CNORM=0:CINV=1
1070 PRINT :? "Input Path and file to print";
1080 INPUT FN$
1090 TRAP 1670
1100 OPEN #1,4,0,FN$
1110 ? :? "LOADING FILE ";FN$
1120 A=USR(ADR(RW$),1,RVAL+3,ADR(PIC$),7680)
1130 CLOSE #1
1140 TRAP 40000
1150 OPEN #1,8,0,"E:"
1160 GRAPHICS 24
1170 A=USR(ADR(RW$),1,WVAL+3,ADR(PIC$),7680)
1180 FOR X=15 TO 0 STEP -0.1:SOUND1,12,10,X:NEXT X
1190 OPEN #2,4,0,"K:":GET #2,A:CLOSE #2
1200 CLOSE #1:OPEN #1,8,0,"E:"
1210 ? :? "PRINT THIS FILE? (Y/N) ";
1220 OPEN #2,4,0,"K:":GET #2,A:CLOSE #2
1230 IF (A<>89 AND A<>121) THEN CLOSE #1:?
     CHR$(125):GOTO 1070
1240 ? CHR$(125)
1250 ? :? "CHOOSE PRINTER TYPE"
1260 ? :? "1. 9 PIN PRINTER":? "2. 24 PIN PRINTER"
1270 TRAP 1860
1280 ? :? :INPUT L$:A=VAL(L$)
1290 IF A<1 OR A>2 THEN 1240
1300 ? :? ;"                         PRINTING..."
1310 TRAP 1730
1320 OPEN #2,8,0,"P:"
1330 IF A=1 THEN PRINT #2;CHR$(27);CHR$(65);
     CHR$(8)
1340 IF A=2 THEN PRINT #2;CHR$(27);CHR$(51);
     CHR$(24)
1350 A=USR(ADR(PR$),2,CNORM,ADR(BUFFER$),
     ADR(PIC$))
1360 CLOSE #2
1370 TRAP 40000
1380 FOR A=1 TO 3
1390 FOR X=15 TO 0 STEP-0.25:SOUND1,12,10,X:NEXT X
1400 NEXT A
1410 ? :? ;"                                 DONE!"
1420 CLOSE #1
1430 END
1440 REM
1450 REM THE FOLLOWING DATA IS FOR THE READ/WRITE
     FILE ROUTINE
1460 REM
1470 DATA 104,104,104,10,10,10,10,170,104,104,
     157,66
1480 DATA 3,104,157,69,3,104,157,68,3,104, 157,73
1490 DATA 3,104,157,72,3,32,86,228,96
1500 REM
1510 REM THE FOLLOWING DATA IS FOR THE PRINT DUMP
     ROUTINE
1520 REM
1530 DATA 104,104,104,10,10,10,10,170,169,9,157,66
1540 DATA 3,104,104,133,208,104,157,69,3,133,
     206,104
1550 DATA 157,68,3,133,205,160,0,132,214,169,
     27,145
1560 DATA 205,200,169,75,145,205,200,169,192,145,
     205,200
1570 DATA 169,0,145,205,104,133,204,104,24,105,
     216,133
1580 DATA 203,133,212,165,204,105,29,133,204,133,
     213,169
1590 DATA 196,157,72,3,169,0,157,73,3,133,209,169
1600 DATA 4,133,207,164,209,177,203,69,208,201,
     155,208
1610 DATA 4,169,153,208,16,201,13,208,12,164,
     214,208
1620 DATA 6,160,1,208,6,160,0,169,11,160,0,132
1630 DATA 214,164,207,145,205,165,203,56,233,40,
     133,203
1640 DATA 176,2,198,204,200,132,207,192,196,208,
     200,32
1650 DATA 86,228,165,212,133,203,165,213,133,204,
     230,209
1660 DATA 165,209,201,40,208,177,96
1670 REM THIS TRAP IS FOR ATTEMPTING TO OPEN OR
     LOAD THE FILE
1680 ? :?
1690 GOSUB 1810:? "ERROR # ";PEEK(195);" DURING
     FILE INPUT!"
1700 FOR X=1 TO 950:NEXT X
1710 TRAP 40000
1720 CLOSE #1:? CHR$(125):GOTO 1070
1730 REM THIS TRAP IS FOR ATTEMPTING TO PRINT THE
     FILE
1740 ? :?
1750 GOSUB 1810:? "ERROR # ";PEEK(195);" DURING
     PRINTER OUTPUT!"
1760 FOR X=1 TO 950:NEXT X
1770 TRAP 40000
1780 CLOSE #2:? CHR$(125):? "PRESS ANY KEY TO TRY
     TO PRINT SAME FILE"
1790 OPEN #4,4,0,"K:":GET #4,X:CLOSE #4
1800 ? CHR$(125):GOTO 1280
1810 FOR A=1 TO 2
1820 FOR X=6 TO 15 STEP 2:SOUND 1,16,2,X:NEXT X
1830 FOR X=1 TO 15 STEP 0.25:SOUND 1,16,2,8:
     NEXT X:SOUND 1,0,0,0
1840 NEXT A
1850 RETURN
1860 REM THIS MEANS YOU TYPED A NON-NUMBER IN
     LINE 1260
1870 TRAP 40000
1880 GOTO 1240
```

[Editor's Note: This program listing will appear on the AC Disk to be distributed to Disk subscribers concurrently with AC's Feb. 1993 issue.]

Dollars And Sense In Education

Barton M. Bresnik, Educational Software Editor

This article concerns the use of Atari eight-bit home computers (400/800, XL/XE/, XEGS) to aid education in the home, in the classroom or anywhere else. (Oh, the title? Well, one eighth of a Spanish coin—and later of a dollar—was a bit. But the title also implies that educators using these computers may be operating on a "shoestring budget".) Despite the orphan status of these computers, many are seeing active use in education. We invite all readers to keep us alerted to educational software and to inform us of educational programs involving the Atari; we even solicit suggestions to develop new educational software.

Here's my profile as an educator using Ataris: A teacher in Attleboro, Massachusetts for 21 years, I've been using computers in my middle-school classroom for the past ten years. I've acquired six systems, consisting of 800XLs and a 600XL (expanded to 64k RAM), 1050 disk drives, monochrome televisions and composite color monitors and two printers. The equipment was obtained from flea markets, ads on GEnie, through Horace Mann Grants and from donations.

My philosophy regarding the use of Atati 8-bits in an educational setting runs like this: "Ownership is important: I could have my students share 15 networked IBM PCs with 600 other children, but having these six Atari computers in my own classroom means that the logisitics of assigning use is made easier. A 19 inch monitor displays graphics, edited on a Koala-pad, to the class as if it were a blackboard, or generates sound or music in the classroom."

Since I'm familiar with the Atari operating system and languages such as BASIC and Turbo BASIC, C, and 6502 Assembler, I write programs to accompany the curricula. For example, an animated picture of atoms in random motion demonstrates the concept of heat. Students can "terraform" a planet, transforming a world similar to Venus into one like Earth, by importing various organisms, in the "Ecologian" simulation. Some of the programs, such as "Ecologian" and "Optical Illusions" are being distributed commercially.

During "study", a student can generate a wordsearch for use in another class. The class has also used the computers to produce a school newspaper, the COELHO CHRONICLE. Students gather information, obtain ads, write articles and learn to edit their writing. This coming year, I hope to produce a newsletter of student activities that will be distributed throughout the Attleboro school system.

My eight-bit system is continually in use at home, as well. Tests, permission forms and other handouts are produced with ATARIWRITER PLUS; posters, cards and awards are produced with AWARDWARE and PRINT POWER, and I keep track of grades with VISICALC spreadsheet. I access a local BBS (the "School Forum") and GEnie using my 800XL and BobTerm telecom software.

To contact this 8-bit-using teacher, please send your comments, software for review, requests for program development, pictures and articles describing the educational use of Ataris and to:

Barton Bresnik, 555 Ware Street, Mansfield, MA 02048 or GEnie E-Mail: B.BRESNIK

N.B.: If you wish your manuscripts/disks returned, please include a self addressed envelope with sufficient postage. Please note, also, that not all requests for program development can be honored; but all that are developed will be released as shareware.

Exploring The Wild FONTier

by David Richardson

The text you are now reading is not the result of the professionally done desk top publishing of Unicorn Publications. This text is a representation of the actual printout of Daisy-Dot 3. This article was done in this manner so that you, the reader, will get a true "What you see is what you get" view of the actual out put of DD3. This article was printed out with a Star NX-1000 printer, and the DOS used was SpartaDos 3.2d. DD3 will work with other DOSes and printers. Reprinted by permission from the Lawrence Atari Computer Club (L.A.C.C.) Newsletter. 2737 Meadows Place, Lawrence, Kansas 66047

Let me start off by saying what I intend to do with this column. For the moment, I intend to basically talk about Daisy Dot III, from now on refered to as DD3. I'll talk about how to use it and what to expect from it. For starters, DD3 is not a public domain program, it is shareware. DD3's predecessor, DD2, is public domain. I will tell you how to use DD3, and how to get around certain problems. If you have DD2 or get it, I will be happy to talk about that, too, but in doing so, I will talk about the advantages of DD3 over DD2, which is great enough to warrant the purchase of DD3. DD3 is not an expensive program. To get it, send $25.00 to:

Roy Goldman
2440 South Jasmine
Denver, CO 80222

What you will get is 2 double-sided single-density disks. On these disks you will get the main program, DD3, and its utilities. These utilities include a customizer program which allows you to customize DD3 so that it boots up with the default settings you specify. You get a utility program that allows you to magnify a font vertically. It allows you to italicize a font. It also allows you to convert any screen character sets into DD3 compatible fonts. You also get a font editor which allows you to modify any DD3 font, or you can create your own from scratch. The font editor also has a customizer program of its own. Also included on the disks are 50 NLQ fonts ready to use.

What's all of this fuss about DD3? Well, let's start off by explaining what it is. DD3 is a "print" processor, as opposed to a "word" processor. What this means is that DD3 takes a word processor file that has been created on a word processor for the 8-bit Atari, and it allows the user to print out that same file with a variety of fonts that otherwise would not be possible for the word processor or that printer. A printout is always limited by the capabilities of the word processor or the printer. If a person knows the control codes of their printer and can enter them into their word processor, they can get a fairly good variety of styles. That variety, however, is not near the variety of styles or the quality of fonts as with DD3.

DD3 allows the printing of what are called Near-Letter-Quality fonts, or NLQ for short. NLQ fonts are fonts that are printed with high enough detail and resolution that it's hard for a person to tell that it was done on a dot-matrix printer. With NLQ fonts, you can print letters or term papers and people will think that you used a typewriter. With DD3, not only do you have NLQ fonts, but if you don't like the ones you have and want to design your own, you can do so very easily. Also, you can use more than one font in a document. And you're not limited to just the document. If you want, you can even print different fonts on the same printed line! You can underline, italicize or print in different densities. Another thing is that DD3 must do all of the print formatting commands itself. You need your word processor for the sole purpose of entering the text. Any print formatting commands used by your word processor, such as margin changes, line spacing, etc. are not needed. DD3 has its own print formatting commands. You use these instead of your word processor's. While typing in the text using the word processor, simply type in the commands for DD3 where you want the changes. Although they will be part of the text file, they won't take up space when printed.

Is all of this worth the hassle? Well, let's use my printer as an example. I have a Star NX1000 Multifont II printer. It has 4 built-in NLQ styles of letters. It has more if you take into account italics, condensed, bold, and double- and quadruple-sized print, but these are just variations of the main four fonts. Other than that, that's it. It is one of the best printers available especially for the price. With DD3, I have 50 more NLQ fonts to chose from which come with the program, plus any other fonts that are either given to me or I make. I am limited only by my imagination. Even my previous printer, a very old and reliable Gemini 10, not a 10X, could print out very nice quality fonts, and it was never intended to print NLQ fonts. This gives the you the ability to print very professional looking documents.

Many of you out there have used the same word processor for years and know how versatile your printouts can be because you have taken the time to know all of the commands of the word processor. The time and effort of learning all of this is well worth it, when you consider the fine results you have had. This is even more true with DD3. With the right commands and fonts, you won't believe some of the things you can do with your tiny 8-bit system. Let me show you just some of the things you can do with DD3:

This is a font called ROMAN2 that comes with DD3. It looks more like a conventional typewriter font, but if you look closely, you'll notice that it is proportional, which for those of you who aren't familiar with the term, each letter is a different width, as opposed to a conventional typewriter, in which each letter is the same width.

Keeping that same line of thought you could take it one step further:

If you really want people to think that while typing your term paper you slaved over a lowly typewriter, you could use this font called PICA10 which comes with DD3. These letters are all the same width, just like a typewriter.

Of course, you're not going to fool anyone with these fonts, but they are quite remarkable in their detail. Not many people take the time out to look very closely at every document they see to see what type of method was used to print them. It is quite possible that most people won't give them a second thought, but they'll think you used a typewriter. You might even fool them into thinking that you wrote it by hand:

This font, called CASUAL, is designed to look like handwriting. As you can see, you are limited only by your imagination.

All of these changes were made with a few keystrokes and a few NLQ font files thrown in. And remember, FIFTY fonts come with the DD3 program. You want a bolder type of printing, say for a flyer or a head line? How about these examples of what you can do with various fonts?

Daisy Dot III
YARD SALE
Dance Party

Of the fonts you have seen so far, only ROMAN2, PICA10, and the font you are now reading, called PLAIN, come with DD3. The other fonts I created myself. As far as the NLQ fonts go, they will all be in the public domain. You can feel free to put them on bulletin boards, or download them from bulletin boards. These extra fonts I have created I have already sent to Roy Goldman, along with many others that I have made. It is not as hard as you think to make new fonts. I will cover that subject in another column.

If you are interested in DD3, and want to get a taste of what it is like, there is a public domain version of DD3 that is free, but it does not do everything that the full-blown version does. The main thing that it doesn't do is it won't allow you to switch fonts in a document. You are stuck with the same font throughout the document. This PD version of DD3 is supposed to be available on the bulletin boards. You might see if you can get it.

You have seen just a few of the samples of what you can do with DD3. Hopefully through this column, I will eventually show you all of the fonts available for DD3 that I am aware of. I hope that I have aroused your curiosity about this excellent program. Eventually we will get into other subjects, such as:

-- Converting Printshop icons so that they are compatible with DD3
-- Double column printing
-- Designing fonts with the font editor, either from scratch or by modifying existing ones
-- Printer compatibility
-- Word processor compatibility
-- Any other subjects you may wish to know about

If you have any questions and would like to write, write to me, in care of this magazine. If you wish to write to me directly, my address is:

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P.O. Box 746
Lawrence, KS 66044
Phone: 913-843-5213

Provincialism as a Factor in the Survival of User Communities: Necessary But Not Sufficient

Essay by Alan Sharkis, Contributing Author

I'm an Atari 8-bitter, and I belong to two user groups. One group supports all Atari computers; the other is exclusively 8-bit. These groups represent one extreme and the middle of the range. The other extreme is the club that supports all computers. I feel we need the entire spectrum for the survival of our Classic Ataris. I also feel that individual users must have a little of each philosophy in their makeup if the 8-bits are to survive.

Other Platforms

While the Atari 8-bit is my main computer, I also use an MS-DOS machine at home and an Apple IIc on the job. The Atari 8-bit wasn't the first computer I ever used. My first experience with computers was learning a little COBOL on a Burroughs 6800 mainframe running an IBM 360 emulator and virtual memory. When the time came for our family to have a computer, we researched the available ones very thoroughly and chose the Atari 800. Our budget and needs were such that disk storage took a back seat to an 850 interface and a very capable Okidata 92 printer. Cassette storage proved to be frustrating, so after a couple years we shelled out for a 1050 disk drive.

Atari 8-bits were the leaders in those days; Commodore had not yet made its challenge strong, and Apple II's weren't "your average home computer" because of their high prices. My sources of software and news were magazines and occasional visits to software stores. I hadn't yet joined a user group or bought a modem. I learned about the 800—its endearing qualities and its faults—in virtual isolation. After awhile, when it became very attractive, I opted for a 130XE, which I still use.

Later, I acquired a modem and began to explore what other Atari 8-bitters were doing. A friend took me to a user group meeting, and I joined soon after. (I've since left that club, but only because of geography.) I was exposed to the Apple IIc when my office gave me one to use with the homebound youngsters I teach. Here, too, there was a strong emphasis on telecommunications. Soon I became aware of the fact that all computers can share text files. I also became aware of the fact that many local BBSs and commercial information services had file areas for computers other than their own platform. Different types of computers began to occupy different niches in the market. I began to see some advantages in being familiar with more than one type of computer. I learned the mechanics of translating text files prepared on one computer for use on another.

Many users didn't want their machines to be special-purpose machines. They put pressure on software houses to "port" applications that would run on a different machine than their own. Graphical user interfaces, provided by software, were running on machines that didn't have native graphical user interfaces. Machine emulation also seemed to become a worthy goal. Perhaps its greatest successful expression to date has been seen in the Macintosh, Atari 8-bit and MS-DOS emulators that run on the ST. Emulation fascinated users. It also provided man-hours of work and dollars of profit for their creators. The success of the ST XFormer (the 8-bit emulator that runs on the Atari ST) shows that ST users still find some value in 8-bit software.

New Hardware for Old 8-Bits

Let's turn that around. Several companies are now making interfaces for the 8-bit, allowing it to use "standard" IBM-type storage devices. This shows that 8-bitters are interested in using existing and widely-available equipment to enhance and insure the longevity of their machines. Hard drive users in the 8-bit community have known that for a long time. Concerning floppies, Atari Corp., wittingly or not, contributed to that trend by putting an industry-standard floppy drive mechanism in their XF-551 disk drive!

I purchased my IBM clone when I began to write materials for the Board of Education. These had to be presented as disk files that could be read by their machines. Very soon, I had converted virtually everything I had ever written on any machine to MS-DOS, Atari 8-bit, and Apple IIc formats. My null-modem cables (which I made up) and A/B switchboxes were doing yeoman service. I admit that writing and telecommunicating seems more convenient for me on the MS-DOS machine. But I still do those things on the Atari, and I still use the Atari for every other computer task.

What about using one computer to serve another? I use Nick Kennedy's SIO2PC to make my MS-DOS machine a multiple RAMdisk and disk drive emulator for my 8-bit. The RAMdisk images can be stored as MS-DOS files on 1.44Mb floppies, or even on the MS-DOS machine's hard drive. Somewhere, gathering dust in my archives, I have a Commodore BASIC software emulator that runs on my 8-bit and someone's unfinished software Apple II emulator for my IBM clone. I'm not interested in emulation for its own sake.

Sampling Other Environments

There are individuals and user groups in the Atari 8-bit community for whom their machine is the only one that exists. My friends with C-64's and other machines tell me that's also true in their communities. That kind of fanatical devotion is necessary if any computer will survive beyond the end of its manufacturer's support. But, is that kind of fanaticism sufficient for the machine's survival? I think not. Atari 8-bitters (and Coleco Adam, Apple II, Timex-Sinclair, TI-99, C-64 and a host of others) would do well to expose themselves to the capabilities of other computers. In the process, they could expose users of other computers to the unique qualities of their preferred machines. Mutual respect of each other's computer, not "Machine Wars", would be the goal.

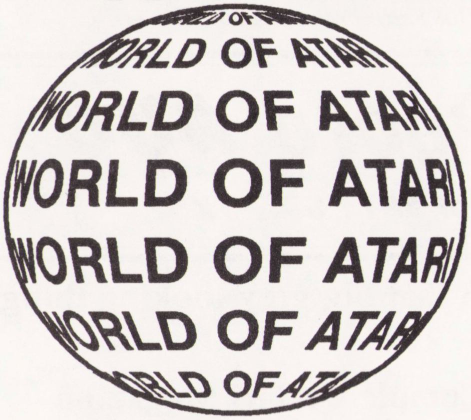
If you use a computer to retrieve or distribute information, the platform you use shouldn't be a barrier to that process. The fact that the industry never standardized ASCII codes above decimal 127 allowed computer manufacturers to develop their own graphics and other alternate character sets. It also made translation necessary among the different machines. But clever programmers, working in all machine environments, have gotten around that. Suppose you found a text file on a nutritional topic on some BBS. It might save the life of a family member. Would you refuse to download it if you discovered the author had prepared it on a Macintosh?

Provincialism in Clubs

Let's return to the idea that provincialism is sufficient to save our 8-bit Ataris. I maintain that provincialism alone is not only insufficient for the survival of our machines, but it might work against that survival. For example, I know people who've decided they'll never so much as look at an MS-DOS machine—or a Mac, ST, or Amiga. My 8-bit club has some members who've expressed similar attitudes. The upside is that this devotion fuels the energy of club members who constantly work to attract new members from among the isolated Classic Atari users out there. The group is the greatest single source of information about my 8-bits I've ever encountered. This is due to the contributions of all the members, some of whom telecommunicate as I do.

Yet, the very nature of group activities in a club can also help dissipate provincialism by expanding the horizons of the isolated user. Our club maintains an active newsletter exchange. We accept corresponding members, and we grant honorary memberships to great contributors in the 8-bit world. We lend monetary support to a sister club's BBS, since we can't support our own. And, for the most part,

CURRENT NOTES



Your Monitor on the World of Atari

800/800XL
Atari 130XE
Atari ST/Mega
Atari STe
Atari Mega STe
Atar TT
Falcon 030

Current Notes, in its 12th year, is published 10 times a year, (monthly excluding January and August). Each 84 page issue is jam-packed with Atari news, product reviews, and interesting and helpful articles to help you get more from your machine. Subscriptions are $27 per year or $48 for two years. (Foreign subscriptions are $35/yr and $65/2 years.) Send your check or money order to: Current Notes, Inc., 122 N. Johnson Rd, Sterling VA 20164. MC and VISA orders accepted; call (703) 450-4761.

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CURRENT NOTES

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For the 2nd straight year, *Atari User* surveyed the available Atari–market magazines and once more gave *Current Notes* 4 and 1/2 stars, the highest rating of any magazine.

US Magazines:	
CURRENT NOTES	★ ★ ★ ★ ☆
Atari Explorer	★ ★ ★ ☆
Atari Interface	★ ★ ☆
ST Informer	★ ★ ☆
International Magazines:	
Atari ST User	★ ★ ★ ★
ST Action	★ ★ ★ ☆
ST Format	★ ★ ★ ☆

we're open-minded about our members trying other machines.

We're confident most of them will still respect the 8-bit above the others. Individuals and clubs that stay narrowly focused in their own little world and don't explore the broader environment wind up bemoaning a diminished software supply and a shrinking user base. We might not lose them to another machine, but we'll lose them to their own pessimism about the 8-bit.

Some of those pessimists display their xenophobia toward other computers because they've heard that newer machines have capabilities exceeding those of their beloved Atari 8-bits. They steadfastly advise other 8-bitters to act as they do, perhaps out of fear their fellow 8-bitters will "desert the cause", further depleting our user base. But if the pessimists expanded their horizons through contacts with others, they would know we still have dreamers and creators like Chuck Steinman, Bob Puff, Wes Newell, and Bob Woolley. Their contributions to our market have vastly expanded the capabilities of our machines, allowing them to keep pace and take advantage of today's rapidly evolving technology. No one said the capabilities of the Atari 8-bit have been, or will ever be, exhausted. I still marvel at the graphics screens done by our 8-bit friends in Germany and Holland. They rival anything that "more capable" computers can do.

Exploring New Machines

Can you get to like a new machine that you're trying out? You might not like it. Your familiarity with the 8-bit might stand in the way of operating the new machine. You might discover that it lacks conveniences and features you've grown to like in the Atari. Have you wasted your time? Not at all. You've simply reaffirmed the rationale for staying with your 8-bit.

What if you do like the new machine? You might find it endearing for one or more specific tasks it performs extremely well, or because of the demands of your work. What if you decide that you actually want and need it? If your overriding needs say that you must buy one, your 8-bit will still be useful for many tasks. Consider leaving it set up, particularly if it has served you as well as mine continues to serve me. But it would be a balanced judgement based on experience with other environments rather than the blind provincialism of an isolated devotee.

[Editor's Comment: The arguments presented by Alan Sharkis in this essay lay a significant cornerstone of the philosophical foundation of this magazine. Alan is the Newsletter Librarian of the Ol' Hackers Atari User Group.

Atari Classics exemplifies the spirit of Alan's essay. The idea for this magazine was born from an on-line telecommunications exchange and wouldn't have gotten very far without the support of usergroups all over the world. Primary storage media for this magazine presently consists of a cluster of four IBM-style 1.44meg 3.5" floppies driven by the Computer Software Services Black Box/Floppy Board attached to a 256K 800XL and augmented by a CSS dual upgraded XF-551 that reads/writes 360K 5.25" floppies and 720K 3.5" floppies. Our Managing Editor learned FORTRAN and BASIC on an IBM 360/370 timeshared mainframe and uses a Mac-SE and DEC VAX mainframe at work. I also own an Atari STe with Mac emulator. But I still prefer the 800XL. —BP]

Bournemouth & Poole AUG

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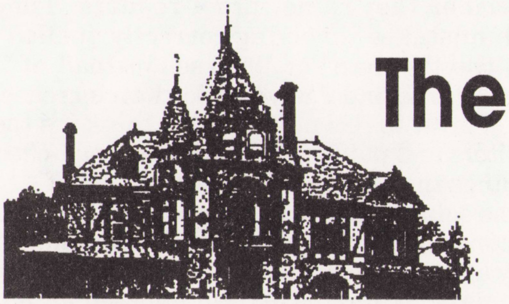

The Garret

Ed Hall, AC Staff Columnist

Starving Artists, Plots Unlimited, Writers' Tools, and Dark Star

When I suggested to Ben Poehland the name of this column, there was a brief pause on the phone, then a puzzled query, "The garrote?" Hastily I assured him that I had no intention of throttling anyone. Of course, there's always the possibility that I may choke on my own words. Should that happen, it would be poetic justice, since this column is about writing.

So, if my "garret" isn't the kind you use to strangle someone, what is it? Picture an old Victorian-style house in which one corner has been expanded into a tower that's taller than the rest of the structure. Just under the steeply sloping roof lies the garret, a small loft or attic space. There's a small dirty window with a cracked pane, and the walls and ceiling are of rough-hewn wooden beams. The roof leaks when it rains. In the wee hours of the morning, when day-labor men are deep in slumber and the rest of the house is dark, a pale shaft of light emanates from the tiny window. For the garret, you see, is the traditional home of the "Starving Artist" who slaves away at his craft, ever confident he will one day finish his masterpiece and leave the garret behind forever.

My credentials—and this column's title—come in part from my having left a rather well-paying job in order to work on a novel. I'm not starving yet, but neither is the book finished. Anyway, I spend a lot of time sitting in front of my XE patiently awaiting inspiration, and I've sometimes wondered what sort of effect, if any, the computer was having on my creativity. In "Understanding Media," which came out before the personal computer revolution, media guru Marshall McLuhan declared, "...the typewriter has altered English verse and prose, and indeed, the very mental habits, themselves, of writers." If this is true, then surely the same can be said of computers and word processors.

I can offer a mundane example: in Canada (where I live) the host of a long-running, national radio program observed that since the proliferation of personal computers, the letters he's received have noticeably increased in length. Are there more significant ways in which computers have affected writing? My guess is yes, although I can't begin to say how. But as for directly participating in the creative process itself, until recently I would have said no.

Plots Unlimited

Take a look at any recent issue of Writer's Digest and you'll see a full-page ad for a software program called Plots Unlimited. It claims to have been "created especially for writers of screenplays, novels, short stories, plays and television scripts." I haven't had a look at it (it's only available for Macs and IBMs), but I imagine it works by selecting options from a database of plot elements.

Recently I came across a program called T.V. Plots which illustrates this principle. You've probably seen similar programs—ones that generate silly sentences, or offer advice after the fashion of Eliza. I began tinkering with T.V. Plots and ended up completely rewriting it. My version accompanies this article as a type-in listing. The concept is very simple. Lines 125-135 generate the random numbers used to determine which words and phrases the program uses.

After working on T.V. Plots, I came away much less skeptical about the practical merits of a plot generator. This is because many kinds of fiction are very formulaic—romances, crime novels, books in a series (Tarzan, Nancy Drew, etc.)—not to mention most TV shows. Publishers who specialize in formula fiction usually provide writers with guidelines which are very prescriptive. Writers of romances, for example, might be directed to introduce the heroine's love interest by page 2, and orchestrate their first kiss by page 25. For writers who ply their craft in such highly structured fields, a plot generator could indeed be very useful. For writers scripting daily soap operas, or weekly sitcoms, it could be a godsend. And if you think I exaggerate, play around with T.V. Plots and see how eerily familiar some of the plot-lines sound.

Atari Word Tools

We may not have anything as grand as Plots Unlimited for our 8-bit machines (nor as expensive, at $399), but don't despair. Creative Process (from the former Antic Catalog) can help with plotting stories, drafting speeches, planning articles, in fact with just about any kind of writing.

Creative Process doesn't generate ideas; it just helps organize them. For this reason it's called an idea or outline processor. You type in your ideas as they occur, using point-form notation. Each point becomes either a heading or part of a list beneath a heading; entire groups with all their sub-points can be repositioned as desired. Working in point-form allows for the freer flow of ideas and stimulates your creativity. It's a technique often taught in creative writing classes. Of course, you don't need Creative Process to employ this technique, but its advantage over a pen and paper is the same as a word processor's: it's so much easier to edit. You can also use the technique with a word processor, but since Creative Process is set up for point-form use and automatic indentation, it makes outlines much easier to construct. Creative Process is compatible with AtariWriter, PaperClip, Speedscript, and other word processors.

Did you know it's possible to gauge the readability of your writing? That's because shorter words and sentences are easier to read than longer ones. Based on this premise, several readability indices have been developed. The Fog Index is one such measure. Its ratings correspond to the grade level needed to understand a piece of text. Most newspapers are written for a grade 8 level. A rating of 12 is generally considered to be too difficult for normal use.

Fog programs have appeared in both Antic (February 1987) and Analog (July 1988). I tried them out on this article, and obtained ratings of 8.5 and 10. The programs also provide other information, the most useful of which is a word count. You'd think this would be a fairly straightforward procedure, but apparently not. According to the programs, this article contains either 1603 or 1690 words. PaperClip, the word processor I favor, comes up with a different figure (1657 words). Fortunately, word counts don't need to be exact; it's normal to round them off to the nearest 100, 500, or 1000.

The Antic fogger is painfully slow, but responds well to a RAMdisk and Turbo-Basic. The Analog fogger is the faster of the two, but wouldn't cooperate with Turbo-Basic, and needs a minor modification for use with a RAMdisk. Neither program worked when compiled with the Turbo-Basic compiler. I also discovered that text files with strings of punctuation marks (e.g. ellipsis, or several exclamation points in a row) could cause serious miscalculations in both foggers.

A less esoteric application for writers is the spell-checker. Most commercial word processors are equipped with them, but if yours isn't, try contacting a user group and ask for the following:

1. Magic Spell from Analog magazine, issue 46, but see also reader comments in issues 48, 50 and 54 for program modifications.
2. Personal Spell Checker, a disk bonus from Antic, October 1987. The sample dictionary file (Diction.1) was reportedly buggy, so best to discard it.

The only drawback to these public domain programs is that you have to construct your own dictionaries. If any readers have done this and would be willing to share them, or know of any P.D. service where they can be obtained, let me know and I'll pass on the info.

As useful as spell-checkers are, it's important to remember they're not proof-readers. They won't catch mistakes involving correctly spelled words, like "the the man" or "hoarse" instead of "horse". Both my wife and I have noticed an increase in this type of error in recent books. We think it's the result of editors and publishers relying on spell-checkers to do things they weren't designed for.

The solution to the problem is spell-checkers that are context-sensitive. I don't know whether such programs are available yet, but I do know that grammar checkers have been released for a number of platforms, including the ST. Unfortunately, it's not likely we'll ever see such products for our 8-bits.

To wrap things up, I'll mention a few utilities I keep on hand to assist with other writing tasks, and house-keeping duties associated with computer-generated text.

1. Text Tidier from AIM's December 1991 disk strips word-processor editing commands from a text file, and breaks large files into smaller ones.
2. Super Locator from Antic June 1989 searches files for a specified string. By using wildcards, one can direct the program to search several files in succession.
3. Bibliography Master from Antic (November 1987) is a labor-saving program that students will appreciate. Just type in the references and your computer will send a properly formatted bibliography to the printer. Note that a program modification appeared in the letters page of the May 1988 issue.

Dark Star

Before I finish, I'd like to change the subject somewhat and bring to your attention a movie fanzine called Dark Star, which focuses on science fiction, fantasy and horror flicks. Issue No. 8 features pieces on Bladerunner and The Princess Bride, as well as reviews of numerous movies, movie soundtracks, and books dealing with cinema.

Why mention Dark Star? Because it was produced entirely on an Atari 8-bit system using Daisy-Dot II to format the pages. It's a 40-page magazine enlivened with good writing, black-and-white photos (movie stills and publicity shots), and a two-color cover. I heartily recommend it to movie freaks who enjoy fantasy and SF. The cost is 1.50 British pounds (2.00 pounds for back issues), but you should also include something extra for postage, especially if you're ordering from North America. Dark Star is edited and published by Rob Dyer. Write to:Dark Star Magazine, 64 Arthur St., Gravesend, Kent, England

What Next?

In future issues I want to discuss text adventures, and in particular a British company called Level 9, which has produced programs every bit as good as Infocom's. Most of these games are probably unknown in North America. The good news is that several are still available. I may also have the temerity to inflict upon you some concrete poetry created with the help of Daisy-Dot III.

Till next time...

[Editor's Note: T.V. Plots BASIC listing will appear on the first AC Disk to be distributed to Disk subscribers concurrently with AC's next issue.]

```
100 REM ┌─────────────────────────┐
105 REM │ T.V.PLOTS by Ed Hall    │
110 REM │ ATARI CLASSICS MAGAZINE │
115 REM └─────────────────────────┘
120 GOTO 370
125 X=INT(RND(0)*10)+1:RETURN
130 X=INT(RND(0)*30)+1:RETURN
135 X=INT(RND(0)*50)+1:RETURN
140 GOSUB 135:IF X=50 THEN A$="":GOTO 150
145 RESTORE 180:FOR Z=1 TO X:READ A$:NEXT Z
150 GOSUB 135:RESTORE 200:FOR Z=1 TO X:READ B$:NEXT Z
155 GOSUB 125:RESTORE 220:FOR Z=1 TO X:READ C$:NEXT Z
160 GOSUB 125:RESTORE 230:FOR Z=1 TO X:READ D$:NEXT Z
165 GOSUB 130:RESTORE 235:FOR Z=1 TO X:READ E$:NEXT Z
170 GOSUB 130:RESTORE 255:FOR Z=1 TO X:READ F$:NEXT Z
175 GOSUB 135:RESTORE 270:FOR Z=1 TO X:READ G$:NEXT Z
180 DATA LOVE,FANTASY,RED,MUSICAL,SINISTER,YOUNG,HOT,NATURE'S,HAPPY,SILENT,PROBLEM,EVIL,CURIOUS
185 DATA POLITICAL,SUPER,ATHLETIC,ANONYMOUS,SWEET,FRIENDLY,STAR,FOOLISH,AMERICAN,NAKED,SECRET
190 DATA ALIEN,MEDICAL,STRANGE,SACRED,JOYOUS,PRACTICAL,FAST,DRUG,BIG FAT,LOVING,ULTIMATE,THE LAST
195 DATA THE,FINAL,BLUE,SAVAGE,PRIMITIVE,LUCKY,RENEGADE,SPOOKY,EERIE,INNER,PLASTIC,UNKNOWN,ANXIOUS
200 DATA CITY,KINGDOM,DERELICTS,VALLEY,RANCH,BARRACKS,MARRIAGE,GARDEN,KNIGHT,FOREST,BARRIERS,ROAD
205 DATA STREET,CHILDREN,FAMILY,HOME,MOTEL,COWBOYS,WARD,COLONY,OUTCAST,AUTOMOBILE,DILEMMA,CASTLE,ROOM
210 DATA SURPRISE,PLAYHOUSE,COOK,ADVICE,SEARCH,UNIVERSE,REVENGE,VOYAGE,SHERIFF,HUNKS,GAMES,LAUGHS
215 DATA DAWN,GUNS,FIRE,FOOD,RIGHTS,MOTHERS,EARTH,SCANDAL,MANSION,EVIL,PLACE,SHACK,BREAKFAST
220 DATA hilarious,fact-based,startling,controversial,daring,family-oriented,heart-warming,action-packed
225 DATA fast-paced,educational
230 DATA comedy,mini-series,soap opera,sitcom,movie,special,presentation,drama,musical,program
235 DATA a swinging,a brilliant,a sensitive,a crabby,a scantily-clad,a retired,a fast-talking
240 DATA a dancing,a singing,a goofy,an overweight,a bungling,a troubled,a shrewd,a well-dressed,an inquisativ
245 DATA a lovable,a rude,a trendy,a power-hungry,a kind-hearted,an engaging,a pompous,a sex-crazy
250 DATA a wacky,a frightened,a muscular,a sloppy,a quirky,an absent-minded
255 DATA disk jockey,scientist,lawyer,town marshall,dentist,bus driver,doctor,bigot,taxi driver,butler
260 DATA secret agent,reporter,feminist,priest,magician,burglar,cop,mayor,private eye,alien,politician
265 DATA ghost,housewife,grocery clerk,senior citizen,hillbilly,astronaut,cook,psychiatrist,cello player
270 DATA comes from another planet,runs a country inn,goes to university,has a curious medical condition
275 DATA is afraid of going bald,wants to open a restaurant,gets marooned on an island,tells corny jokes
280 DATA worries about the environment,desperately wants to get married,has weird neighbours,buys a gun
285 DATA has an unusual accident,is wrongly accused of murder,has magical powers,moves to California
290 DATA has a pesky younger brother,harbors a shameful secret,has awful table manners,suffers from amnesia
295 DATA has an extravagant wardrobe,has mysterious powers,smells funny,wants to be a veterinarian
300 DATA has a talking horse,lives in a house trailer,offers questionable legal advice,advocates animal rights
305 DATA is searching for a one-armed man,has a midlife crisis,becomes a vegetarian,gets caught in a time-warp
310 DATA has trouble paying bills,has a nerdy son-in-law,joins the navy,believes in reincarnation
315 DATA eats nothing but pizza,believes Elvis is still alive,wants to clean up the streets
320 DATA discovers a long-lost twin,has a secret identity,hires a bodyguard,gives cooking lessons
325 DATA marries someone with numerous     children,tries to hold down 2 jobs,hosts a TV talk show
330 DATA gives tips on home renovations,moonlights as a dog-catcher,wants to build a robot,plays in a rock ban
335 GET #1,KEY:IF KEY<>32 THEN 425
340 ? "K":POSITION 0,0:IF A$="" THEN 350
345 ? A$;" ";
350 ? B$;" ";:IF A$="" THEN ? PEEK(53770)*10
355 POSITION 2,5:? :? "This ";C$;" ";D$;" is":? "about ";E$;" ";F$:? "who ";G$;"."
360 SOUND 1,50,10,6:FOR Z=1 TO 50:NEXT Z:SOUND 1,0,0,0
365 POSITION 5,19:? "SPACEBAR":GOTO 140
370 GRAPHICS 0:POKE 752,1:POKE 708,40:POKE 709,10:POKE 710,194
375 REM DL by C.Walnum (ANALOG 50)
380 DL=PEEK(560)+256*PEEK(561)+4
385 POKE DL-1,71:POKE DL+2,7:POKE DL+20,6:POKE DL+21,6:POKE DL+22,6
390 POKE DL+23,65:POKE DL+24,PEEK(560):POKE DL+25,PEEK(561)
395 POSITION 4,0:? "T.V. PLOTS"
400 POSITION 7,5:? "This program comes up                  with ideas for TV shows."
405 POSITION 7,8:? "Hit <SPACEBAR> to begin.               Any other key exits."
410 POSITION 4,19:? "BY ED HALL"
415 DIM A$(10),B$(10),C$(15),D$(12),E$(16),F$(15),G$(42)
420 CLOSE #1:OPEN #1,4,0,"K:":GOTO 140
425 GRAPHICS 0:? "↓↓Remember, too much TV rots the mind.":END
```

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Tracking Down An Upgrade Malfunction

Thomas J. Andrews, Contributing Author

Some time ago, my RAMBO upgrade failed. After over three months of working flawlessly, it began to get confused. RAMdisks and files would disappear in whole or in part. Sometimes it would fail to boot the RAMdisks, becoming lost and wandering off along the way.

Maddening Memory

It was worst when trying to use the ACE of Syracuse "Backstairs" BBS. Downloaded files would disappear when I attempted to copy them to a floppy disk, and the number of free sectors in the RAMdisk would shrink without warning. One of the files I had uploaded was corrupted and unusable. And in the most maddening fashion, every once in a while it would work perfectly.

A severe feeling of depression began to creep in to my being. As I had been told before—and now experienced for myself—having an Atari 8-bit in trouble in Syracuse NY in the 1990's is a terrible feeling. You alternate between panic and dispair, wondering if you should try to find a repair service (fat chance these days!), buy a "reconditioned" one by mail order (from the West Coast: weeks of withdrawal!), chuck everything Atari and get a better supported computer (misery), or take up something less stressful for a hobby (like brain surgery).

Realizing I couldn't continue this way, I switched to my brother's computer, which has also been upgraded, and started to investigate. One of the first things I did was to run the RAMTEST.OBJ program on my computer. This program, available from the Backstairs BBS, is designed to test the RAM installed with a RAMBO upgrade. Much to my surprise, it passed with flying colors, even though I ran the program three times. Obviously, my problem was outside the range of this test.

The next step was a three-way discussion with a couple of ACE heavyweights. Ken Wickert, who currently holds several offices in the Syracuse ACE, has relatively easy access to information and experiences published in user group newsletters from all over, and he's no slouch with the 8-bit himself. Ken Brick, our beloved President, has experience in electronics servicing of medical equipment, and while he is not intimately knowlegeable about the 8-bit, he does know about the general aspects of computer circuitry. For my part, I brought to the conversation a pretty good working knowlege of the 8-bit operating system and a dusty, little used, 20-year-old electrical engineering degree. Oh yeah—I also brought the problem.

Probing the Patient

We began with some of the easy things to check.

The power supply was proposed as a possible source, but I said that probably wasn't it. When I had switched computers, I merely pulled the cables out of the back of mine and plugged them into the other computer, using the same power supply, drives, and software as I had on my own, and my brother's worked perfectly. Of course, mine had worked perfectly for three months.

The memory chips came under scrutiny next. The RAMBO upgrade doesn't come with the 256kx1 DRAM chips; you have to purchase them separately. I had bought mine at bargain prices at a computer fair that was held at the New York State Fairgrounds earlier in the year.

These were 80 nanosecond chips, much faster than those the XL and the RAMBO were designed to use. Ken Wickert knew of this, since he had been with me when I bought them, and he began to question their compatibility on the basis of the excessive speed. I felt that if they were incompatible, they wouldn't have worked as long as they did. Ken Brick put this speculation to rest right away. He explained that the speed of the chips only indicates how quickly they respond when called upon to deliver information to the data line. Once the information is delivered, it remains there until the CPU is ready for it.

However, Ken Brick did suggest that one of the chips might have developed an intermittant problem. It seems that if a chip is going to fail, it will usually do so within that three month period. While they usually don't wait that long to fail, it does happen.

Poopy PIA?

Since the problem seemed to be confined to the expanded memory, I first suspected the RAMBO itself. Later, after a little research into this area of the operaitng system, I began to feel that the PIA chip might be involved. The PIA, or Peripheral Interface Adapter, exists in all Atari 8-bit computers. Its original function in the 400/800 operating system was to control the four controller ports, which can be used for more than just joysticks.

Since few programs utilized ports 3 and 4, when the XL was designed this part of the PIA chip function was changed to memory bank selection. Part of the RAMBO installation involves soldering a five-wire ribbon cable to five of the pins on the PIA. A little too much heat here can turn a perfectly good chip into useless junk. Ken Brick's response to this idea was that an intermittant problem like this could be very difficult to find and that it really could be almost anywhere in the computer.

It soon became obvious to each of us that we needed more information to eliminate some of these possibilities, so it was suggested that I try disassembling my XL and replacing some of the components with those in my brother's, which were known to be good. By switching components, one by one between the two machines, the source of the problem would probably be found when it moved from one XL to the other. Because all the chips in each of our machines are socketed instead of soldered, this was a relatively simple test to perform. After negotiating permission from my brother, I decided to start with the memory chips.

I opened up my XL first. Removing that circuit board from the case does get easier with practice. Just in case, I examined the RAMBO installation before removing the chips—and there I found it!

One of the solder connections of the ribbon cable had broken. When I soldered the wires, in my zeal to protect the PIA chip I had been too lighthanded with the soldering iron. (It would seem that a proper balance is required, too little being as bad as too much.) I resoldered the cable, doing a better job this time, reassembled the computer, and tested it. Everything worked fine again, and still does. Once I knew where the problem was, the symptoms began to make sense. Let me try to explain.

A Logical Explanation

As I mentioned before, part of the function of the PIA chip is memory bank selection. Memory location 54017, which has been given the name PORTB, is used to do this.

The ribbon cable is the electrical connection between the register and the RAMBO circuit board. If one of the wires is disconnected from the register, the RAMBO board always sees that bit as a 0, no matter what is in the register. This will cause the wrong bank to be accessed, and writing to the wrong bank will scramble the data that's supposed to be there—unbeknownst to the CPU.

The computer worked part of the time for two reasons. First, if the RAMdisk controller didn't happen to use the disconnected bit, no scrambling took place. Second, the wire was close enough to the pin that the vibration of typing would occasionally make or break a tenuous connection.

The RAMTEST program didn't pick up the problem because it had no way of knowing that a particular bank of memory it was examining was the wrong one. As long as it found a functioning bank, it assumed all was as it should be.

It's been quite some time now, and there's been no recurrence of the problem. I was lucky—this time. This was a simple, obvious problem with an easy repair. But one question remains unanswered. What do we do when the repairs aren't so easy?

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SELL/TRADE/HAGGLE: my surplus items, make offer/send your trade list. 800 w/256K, 800 w/48K, 130XE w/Omniview 80-col video, 1025 printer, 850 interface. 810: drives(2), side-boards(3), power-boards(2). MIO/256K, Big Blue thermal printer (needs 9-pin data plug), SX212 1200Bd modem. All items GC. Charles Cole, 1590 Foothills Drive, Sierra Vista AZ 85635. GEnie: C.COLE1. CIS: 73217,2321. Delphi: COLESHED.

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WANTED: Technical information for Astra disk drives. I need schematics or any repair information on models 2001 and Big D. However, service info on any model may be useful. Will pay reasonable cost. Jonathan Mordosky, PO. Box 796, Whitehall PA 18052-0796. GEnie: J.C.MORDOSKY.

THE KEY SYSTEM: SLCC BBS carries selection of message bases connecting Atari 8-bit boards from North America to Western Europe. Direct contact to Bob Woolley for hardware hacking advice; good selection of Atari8 specific file areas. Modem settings 300/1200/2400bps, N81. 510-352-5528 24hrs/day. Michael Sawley, 1451 Excelsior Ave., Oakland CA 94602.

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SELL: Atari 1025 80-column dot matrix printer (not Epson compatible). Direct SIO connection. Ribbons cheap. Very good condition, original user's guide, $15 + postage. Jeff Potter, 814 Banbury Drive, Port Orange FL 32119. GEnie: JDPOTTER; CIS: 74030,2020.

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